

Janssens et al. (2006)

Groshong® PICCs



Prospective, descriptive studies on PICCs

from placement until removal at the University Hospitals Leuven

Coordination: vascular access team

Aussloos et al. (2007)

Open-ended PICCs



Population

Inclusion criteria: need for IV therapy for a minimum of 4 weeks

Indication: IV antibiotic therapy

Age: median 55,5 years of age (range 17 to 81 years)

Gender: 8 female, 12 male

Inclusion criteria: need for IV therapy for a minimum of 3 weeks to 16 weeks

Indication: IV chemotherapy, antibiotics, TPN, blood products

Age: median 56 years of age (range 36 to 77 years)

Gender: 12 female, 8 male

Insertion

100% successful insertion, 70% in 1 or 2 attempts

100% had a correct catheter tip positioning

90% successful insertion, 75% in 1 or 2 attempts

Problems during insertion in 2 additional cases (patients 1 & 19) due to

- ✓ Blood vessel spasm or stenosis
 - ✓ Impossible progression of guide-wire or PICC in vein
- 94% correct catheter tip positioning

Catheter specification

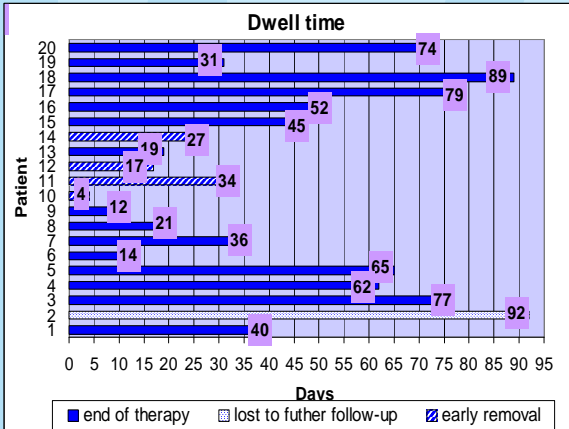
20 valved Groshong® silicone PICC (Bard Inc):

- ✓ All single lumen 4 French

18 open-ended silicone PICCs (Bard Inc., BD, Cook Medical Inc.):

- ✓ 8 single lumen 4 French
- ✓ 9 single lumen 5 French
- ✓ 1 double lumen 5 French

Dwell time



GROSHONG® PICC

Total indwelling time: 890 days

Early removal due to:

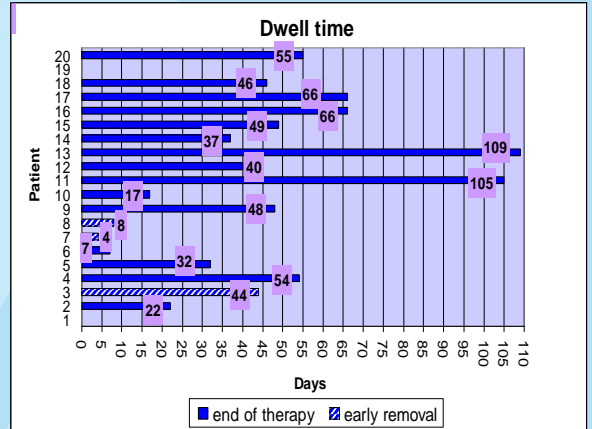
- ✓ Accidental dislodgement (n=1)
- ✓ Infection (n=1)
- ✓ Mechanical tear of the external part of the catheter (n=2)

OPEN-ENDED PICC

Total indwelling time: 808 days

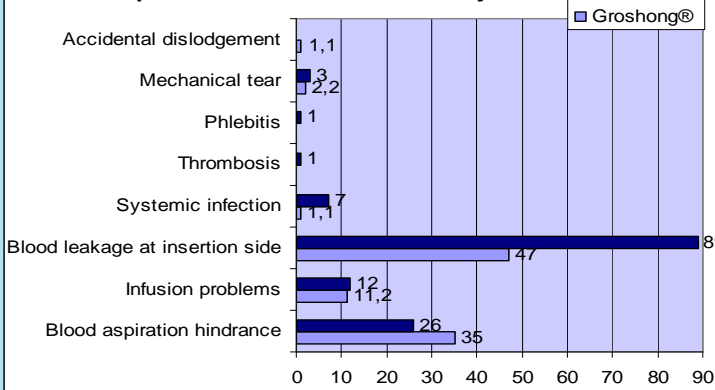
Early removal due to:

- ✓ Thrombophlebitis (n=1)
- ✓ Mechanical tear of the external part of the catheter (n=2)

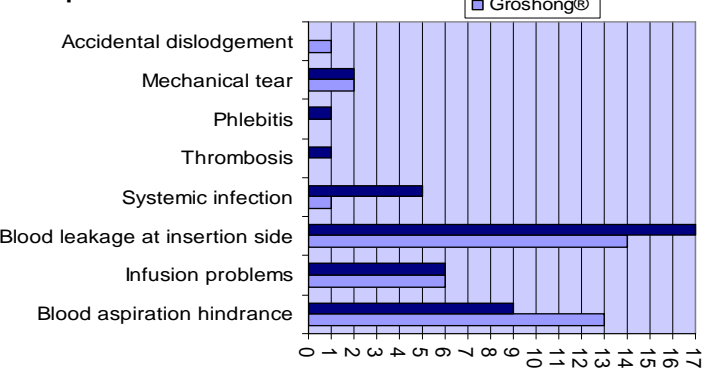


Complications

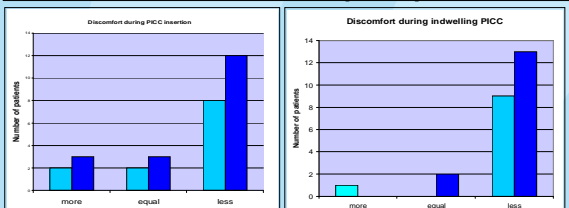
Complications in 1000 catheter days



Complication in number of PICCs



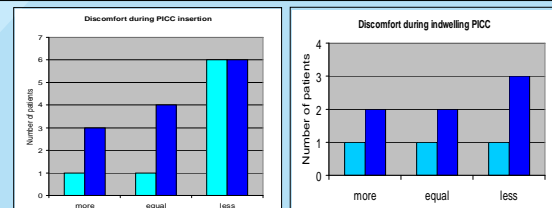
Patient's perception of PICCs compared to Peripheral & Central Venous Catheters



Patients were asked to fill in a questionnaire about their experiences during the insertion and after removing the PICC. They were asked to compare the PICC with previous catheters they had, central lines or peripheral catheters.

CVC

peripheral



Discussion

In the population with Groshong® PICCs, no thrombosis or phlebitis were met. The median blood aspiration speed of the Groshong® and Open-ended PICC are comparable.

More complications were seen among patients with open-ended PICCs, probably due to their underlying condition and to the administration of chemotherapy for cancer. Patients with cancer are more vulnerable for complications (Smith 1998, Walshe 2002, Cheong 2004)

Nurses mentioned problems with administering a great amount of fluids in a short time (> 0,5 l/h) with both type of catheters, valved and open-ended. Maybe polyurethane catheters with greater internal diameter could be the answer.

Conclusions

The present studies emphasised the safety aspects of the PICCs, from insertion until removal. Most complications were minor and similar to complications seen in other CVCs (James 1993, Loughran 1995, Parkinson 1998, Salfar 2005)

PICCs are well accepted by patients and were preferred above other central venous and peripheral catheters.

Further investigation in larger groups of patients about (dis)advantages of different PICC types is necessary before drawing firm conclusions.

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